

What Is Claimed Is:

1. A refrigerator comprising:
a body;
5 a refrigerating chamber and a freezing chamber provided in the body, for taking storage
of foods;
a cool air-generating device provided in the body, for generating a cool air;
a cool air-supplying device including at least one opening for discharging the cool air,
and for circulating the cool air through the freezing chamber, the refrigerating chamber,
10 and the cool air-generating device; and
a separator provided adjacent to the opening, for uniformly diffusing the cool air in the
freezing chamber and the refrigerating chamber, by separating the cool air into at least
two passages.
- 15 2. The refrigerator as claimed in claim 1, wherein the separator is provided to block the
discharged cool air.
3. The refrigerator as claimed in claim 1, wherein the separator is extended in
perpendicular to a flowing direction of the cool air.
- 20 4. The refrigerator as claimed in claim 1, wherein the separator oscillates the discharged
cool air.
5. The refrigerator as claimed in claim 1, wherein the separator generates at least two
25 vortexes in opposite.

6. The refrigerator as claimed in claim 5, wherein the vortexes have size and intensity being different and continuously changed.

5 7. The refrigerator as claimed in claim 1, wherein the separator is configured to allow the separated passages of the cool air to collide with each other before discharging the cool air.

8. The refrigerator as claimed in claim 1, wherein the separated passages of the cool air collide with each other in a straight line.

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9. The refrigerator as claimed in claim 1, wherein the separated passages of the cool air collide with each other at a predetermined angle.

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10. The refrigerator as claimed in claim 1, wherein two opposite passages are formed between the separator and the opening, and the separated cool air flows along the two opposite passages.

11. The refrigerator as claimed in claim 1, wherein the opening is positioned adjacent to a crossing point of meeting the separated passages of the cool air.

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12. The refrigerator as claimed in claim 1, wherein an interval between the separator and the opening is equivalent to (or smaller than) a width of the opening.

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13. The refrigerator as claimed in claim 1, wherein an interval between the separator and the opening is about 0.5 times of a width of the opening.

14. The refrigerator as claimed in claim 1, wherein a width of the separator is equivalent to a width of the opening.

15. The refrigerator as claimed in claim 1, wherein the cool air-supplying device includes
5 at least one duct for supplying the cool air to the opening.

16. The refrigerator as claimed in claim 1, wherein the opening is configured to discharge the generated cool air to the freezing chamber and the refrigerating chamber.

10 17. The refrigerator as claimed in claim 1, wherein the opening is configured to discharge the generated cool air to the freezing chamber and the refrigerating chamber at least two different directions.

18. The refrigerator as claimed in claim 1, wherein the opening is configured to discharge
15 the generated cool air to the freezing chamber and the refrigerating chamber, the generated cool air discharged in perpendicular.

19. The refrigerator as claimed in claim 1, wherein the opening includes:
first inlets provided to a top wall of the refrigerating chamber and the freezing chamber,
20 to discharge the cool air toward a lower side; and
second inlets provided to an upper sidewall of the refrigerating chamber and the freezing chamber, to discharge the cool air toward an opposite sidewall.

20. The refrigerator as claimed in claim 19, wherein the first and second inlets discharge
25 the cool air at a perpendicular direction.

21. The refrigerator as claimed in claim 19, wherein the opening includes at least one outlet provided at a lower portion of the refrigerating chamber and the freezing chamber, for discharging the cool air circulated in the freezing chamber and the refrigerating chamber.

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22. The refrigerator as claimed in claim 21, wherein the outlets are provided at lower portions of both sidewalls of the freezing chamber and the refrigerating chamber.

23. The refrigerator as claimed in claim 19, wherein the opening further includes:

10 third inlets provided at a lower portion of one sidewall, for discharging the cool air to the opposite sidewall; and

fourth inlets provided on a bottom wall of the refrigerating chamber and the freezing chamber, for discharging the cool air to an upper side.

15 24. The refrigerator as claimed in claim 23, further comprising at least one outlet provided in the center of the sidewall of the refrigerating chamber and the freezing chamber, for discharging the cool air circulated in the freezing chamber and the refrigerating chamber.

20 25. The refrigerator as claimed in claim 1, wherein the opening is configured to discharge the cool air circulated in the freezing chamber and the refrigerating chamber to the cool air-generating device.

25 26. The refrigerating as claimed in claim 1, wherein the opening discharges the cool air circulated in the freezing chamber and the refrigerating chamber to an evaporator of the cool air-generating device.

27. The refrigerator as claimed in claim 1, wherein the cool air-supplying device further includes an auxiliary duct extended adjacent to the evaporator of the cool air-generating device, for directly discharging the cool air circulated in the freezing chamber and the refrigerating chamber to the evaporator.

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28. The refrigerator as claimed in claim 27, wherein the separator is positioned adjacent to an opening of the auxiliary duct.

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29. The refrigerator as claimed in claim 1, wherein the separator is formed of a flat member.

30. The refrigerator as claimed in claim 1, wherein the separator is formed of a round shape being protruded in opposite to a flowing direction of the cool air.

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31. The refrigerator as claimed in claim 1, wherein the separator is formed of an angularly bent shape being protruded in opposite to a flowing direction of the cool air.

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32. The refrigerator as claimed in claim 1, wherein the separator is formed of an oval shape to have both sides being round for the forward and opposite directions of the cool air.

33. The refrigerator as claimed in claim 1, wherein a plurality of protrusions or dimples are formed on the surface of the separator.

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34. The refrigerator as claimed in claim 15, wherein the duct is expanded toward the inside of the refrigerating chamber and/or the freezing chamber.

35. The refrigerator as claimed in claim 15, wherein the duct has an expanded portion adjacent to the separator.

36. The refrigerator as claimed in claim 35, wherein a width of the expanded portion is
5 about 2 to 2.5 times of a width of the corresponding duct.

37. The refrigerator as claimed in claim 35, wherein a height of the expanded portion is about 1 to 1.2 times of a width of the corresponding duct.

10 38. The refrigerator as claimed in claim 15, wherein the duct is gradually expanded.

39. The refrigerator as claimed in claim 15, wherein a sidewall of the expanded portion is inclined at a predetermined angle to a sidewall of the duct.

15 40. The refrigerator as claimed in claim 1, wherein the adjacent separators oscillate the discharged cool air at different directions.

41. The refrigerator as claimed in claim 1, wherein the adjacent separators oscillate the discharged cool air at a perpendicular direction.

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42. The refrigerator as claimed in claim 1, wherein the adjacent separators are configured to separate the discharged cool air at different directions.

43. The refrigerator as claimed in claim 1, wherein the separator further includes one pair
25 of supports extended from the opposite sides of the separator near to the opening, for supporting the separator.

44. The refrigerator as claimed in claim 43, wherein each in one pair of supports from the adjacent separators supports the opposite side.

45. The refrigerator as claimed in claim 1, wherein the adjacent openings have different
5 sizes: